

## **APPENDIX C GUIDE FOR SELECTING OPERATING CONDITIONS**

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<b>EQUIPMENT TYPE</b>	<b>AVERAGE</b>	<b>SEVERE</b>
<b><u>B25 and B35:</u></b> Buckets Clamshell or Dragline  Depreciation Period:	Working in gravels, silts, and sands at low impact freshwater environment.  8,000 - 10,000 hours	Working in rock, hard digging, high impact, or saltwater environment.  6,500 - 8,000 hours
<b><u>C80 and C90:</u></b> Cranes Hydraulic, Truck Mounted Mechanical, Truck Mounted  Depreciation Period:	Lift less than rated capacity, intermittent duty.  14,000 - 20,000 hours	Continuous lift near rated capacity, excessive swing, abrasive materials, sloped surfaces, and saltwater environment.  12,000 - 18,000 hours
<b><u>C85:</u></b> Cranes Mechanical Dragline, Lifting, or Clamshell  Crawler Mounted  Depreciation Period:	Gravels, silts, pull, and lift less than rated capacity.  14,000 - 22,000 hours	Highly abrasive materials, impact breakout, continuous load near rated capacity, and saltwater environment.  12,000 - 18,000 hours
<b><u>G10:</u></b> Generators  Depreciation Period:	Working below rated capacity, good field conditions.  8,000 - 10,000 hours	Working at or above rated capacity, poor field conditions, such as saltwater.  7,000 - 8,000 hours

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<b><u>G15:</u></b> Graders, Motor	Haul road maintenance; road construction, ditching; loose fill spreading; landforming, landleveling; summer road maintenance with medium to heavy winter snow removal; and elevating grader use.	Maintenance of hard-packed roads with embedded rock; heavy fill spreading; ripping scarifying of asphalt or concrete; continuous high load factor; and high impact.
Depreciation Period:	14,500 hours	13,500 hours
<b><u>H25:</u></b> Hydraulic Excavators Crawler Mounted	Mass excavation or trenching where machine digs all the time in natural bed clay soils; some traveling and steady, full throttle operation; and most log loading operations.	Continuous trenching or truck loading in rock or shot rock soils; large amount of travel over rough ground; machine continuously working on rock floor with constant high load factor and high impact; and saltwater environment.
Depreciation Period:	8,500 - 19,000 hours	7,000 – 15,000 hours
<b><u>H30:</u></b> Hydraulic Excavators Wheel Mounted	Continuous digging in sandy clay/sandy gravel, site development, and lumber yard applications.	Continuous digging in rock/natural bed clay, high impact, using hammer, and working in forests or quarries.
Depreciation Period:	8,000 - 10,000 hours	6,500 - 8,000 hours
<b><u>H35:</u></b> Hydraulic Shovels Crawler Mounted (nonelectric)	Continuous loading in well shot rock or fairly tight bank. Good	Continuous loading in poorly shot rock, virgin, or lightly blasted tight

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	underfoot conditions: dry floor, little impact, or sliding on undercarriage.	banks. Adverse underfoot conditions: rough floors, high impact sliding on undercarriage; and saltwater environment.
Depreciation Period:	14,000 - 18,000 hours	12,000 - 16,000 hours
<b><u>L10:</u></b> Land Clearing Equipment	Working in low impact conditions at or below rated capacity.	High impact conditions working at or above rated capacity.
Depreciation Period:	10,000 hours	7,000 hours
<b><u>L30:</u></b> Loaders, Belt (conveyors)	Working below rated capacity, with intermittent service.	Working at or above rated capacity with continuous service.
Depreciation Period:	10,000 hours	8,000 hours
<b><u>L35:</u></b> Loaders, Front End Crawler Type	Bank excavation, intermittent ripping, basement digging of natural bed clays, sands, silts, and gravels; some traveling; and steady full throttle operations.	Loading shot rock, cobbles, glacial till, and caliche; steel millwork; high density materials in standard bucket; continuous work on rock surfaces; large amount of ripping of tight rock materials; high impact conditions; and saltwater environment.
Depreciation Period:	10,000 hours	8,000 hours
<b><u>L40:</u></b> Loaders, Front End Wheel Type	Continuous truck loading from stockpile; low to	Loading shot rock (large loaders); handling high

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(does not include skid steer and tool carriers)	medium density materials in properly sized bucket; hopper charging in low to medium rolling resistance; loading from bank in good digging; and load and carry on poor surfaces and slight adverse grades.	density materials with counterweighted machine; steady loading from very tight banks; continuous work on rough or very soft surfaces; load and carry in hard digging; travel longer distances on poor surfaces with adverse grades and saltwater environment.
Depreciation Period:	9,250 - 13,500 hours	8,750 - 12,000 hours
<b><u>L45 and L50:</u></b> Loaders with Backhoe Crawler Type and Wheel Type	Utility applications in medium to heavy soil; occasional use of constant flow implements and dig depths to 3.05 meters (10 feet).	Production applications or digging in rock; regular use of constant flow implements; and dig depths over 3.05 meters (10 feet).
Depreciation Period:	8,000 hours	6,000 hours
<b><u>L60:</u></b> Log Skidders	Continuous turning, steady skidding for medium distances with moderate decking. Good underfooting: dry floor with few stumps and gradual rolling terrain.	Continuous turning, steady skidding for long distances with frequent decking; poor underfoot conditions: wet floor, steep slopes, and numerous stumps; and saltwater environment.
Depreciation Period:	10,000 hours	8,000 hours
<b><u>M10 - .31 and .32:</u></b> Clamshell dredges < 5 cy Amphibious Excavator	Gravel, silts, breakout force at less than capacity, freshwater conditions.	Rock, abrasive materials, load at rated capacity, saltwater conditions.

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Depreciation Period:	10,000 - 20,000 hours	9,000 - 18,000 hours
<b><u>M10 - .51 and .53:</u></b> Boats, Skiffs, Crew Boats, Work Boats, Survey Boats, and Launches	Freshwater applications, light waves, and steady to light use.	Saltwater use, medium to high waves, heavy use.
Depreciation Period:	16,000 - 18,000 hours	13,000 - 15,000 hours
<b><u>P35:</u></b> Pipelayers	Typical pipelayer use in operating conditions ranging from very good to severe.	Continuous use in deep mud or water or on rock surfaces.
Depreciation Period:	14,000 hours	11,500 hours
<b><u>R10:</u></b> Rippers and Bank Slopers	Light rock, medium breakout force required.	Hard rock, excessive wear due to high breakout force.
Depreciation Period:	8,000 hours	6,500 hours
<b><u>S10, S15, S20, and S25:</u></b> Scrapers Self-Propelled Tractor Drawn Soil Stabilizers	Varying loading and haul road conditions; long and short hauls; adverse and favorable grades; some impact; and typical road-building use on a variety of jobs.	High impact conditions, such as loading ripped rock; overloading, continuous high total resistance conditions; and rough haul roads.
Depreciation Period:	10,000 - 15,000 hours	8,000 - 13,500 hours
<b><u>T15:</u></b> Tractors Crawler (Dozer)	Production dozing in clays, sands, gravels, and talus rock. Push-	Heavy rock ripping; tandem ripping; pushloading and dozing

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	loading scrapers, borrow pit ripping, most land clearing and skidding applications. Medium impact conditions. Production landfill work.	in hard rock; work on rock surfaces; continuous high impact conditions; and saltwater environment.
Depreciation Period:	10,000 - 15,000 hours	8,000 - 12,500 hours
<b>T20:</b> Tractors Wheel Type (Dozer)	Production dozing, push loading in clays, sands, silts, loose gravels; and shovel cleanup.	Production dozing in rock; push loading in rocky, boulder strewn borrow pits; high impact conditions; and landfill compactor work.
Depreciation Period:	14,000 hours	13,000 hours
<b>T30:</b> Trenchers Chain and Wheel Type	Working in sands and silts below rated capacity of the machine.	Working in gravels and abrasive materials at or above the rated capacity of the machine.
Depreciation Period:	8,000 hours	6,000 hours
<b>T45 and T50:</b> Truck Trailers Trucks, Highway	Varying loading and road conditions; and typical construction use on a variety of jobs.	Consistently poor road conditions; and oversized loading equipment.
Depreciation Period:	8,000 - 12,000 hours	6,500 - 10,000 hours
<b>T55 and T60:</b> Truck, Off-Highway Trucks, Water, Off-Highway (Articulated	Varying load and haul road conditions; high rolling resistance and poor traction during part	Continuous use on very poorly maintained haul roads, high rolling resistance, and poor

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Depreciation Period:	12,000 - 20,000 hours	10,000 - 18,000 hours
<b><u>W10 and W15:</u></b> Wagons Bottom Dump Rear Dump  Chapter 1	Varying load and haul road conditions; long and short hauls; high rolling resistance and poor traction during part of the job; some adverse grades; some impact; typical road building use in a variety of jobs; and dam construction, open-pit mining, <i>etc.</i>	Continuous use on very poorly maintained haul roads, high rolling resistance, and poor traction; high impact conditions, such as loading ripped rock; frequent adverse grades and high impact loads; and poorly matched loading equipment with continuous overloading.
Depreciation Period:	12,000 hours	10,000 hours